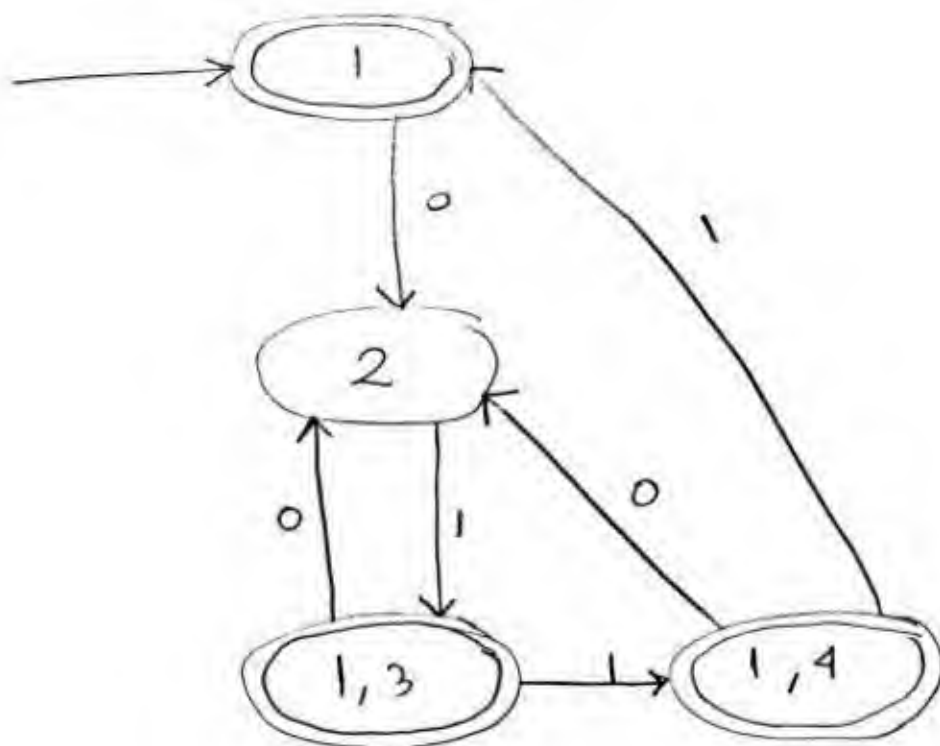
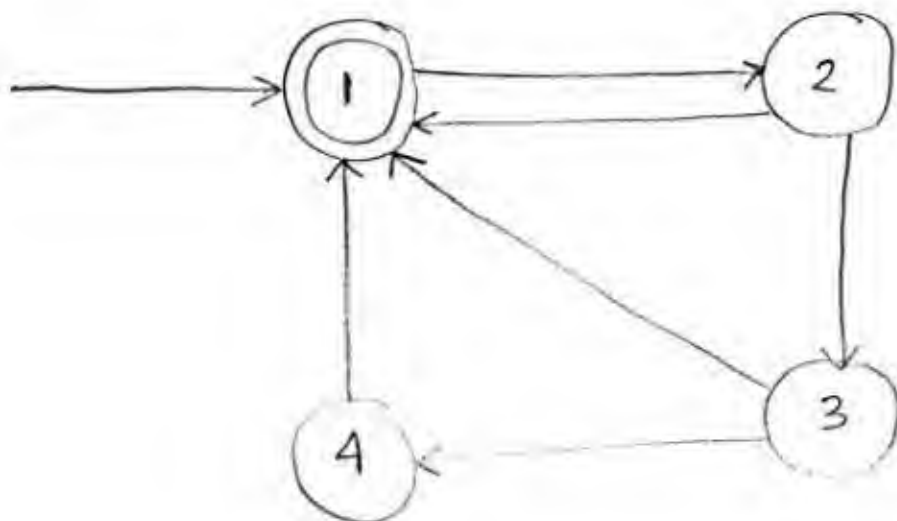


Sec 4

Sheet 3

Compiler

[4] 01, 011, 0111



[1] Sec 4

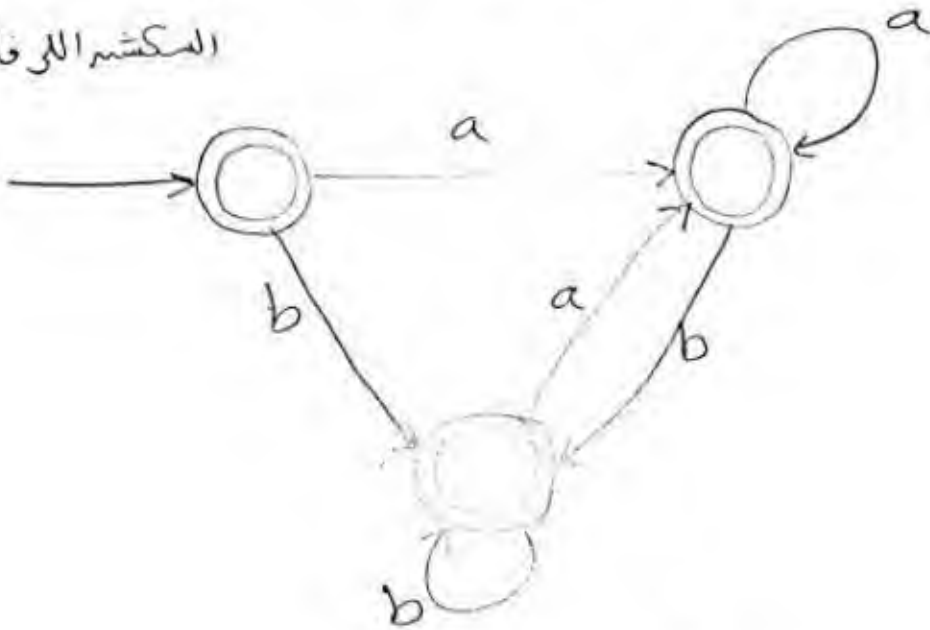
5

a) $(a/b)^*$

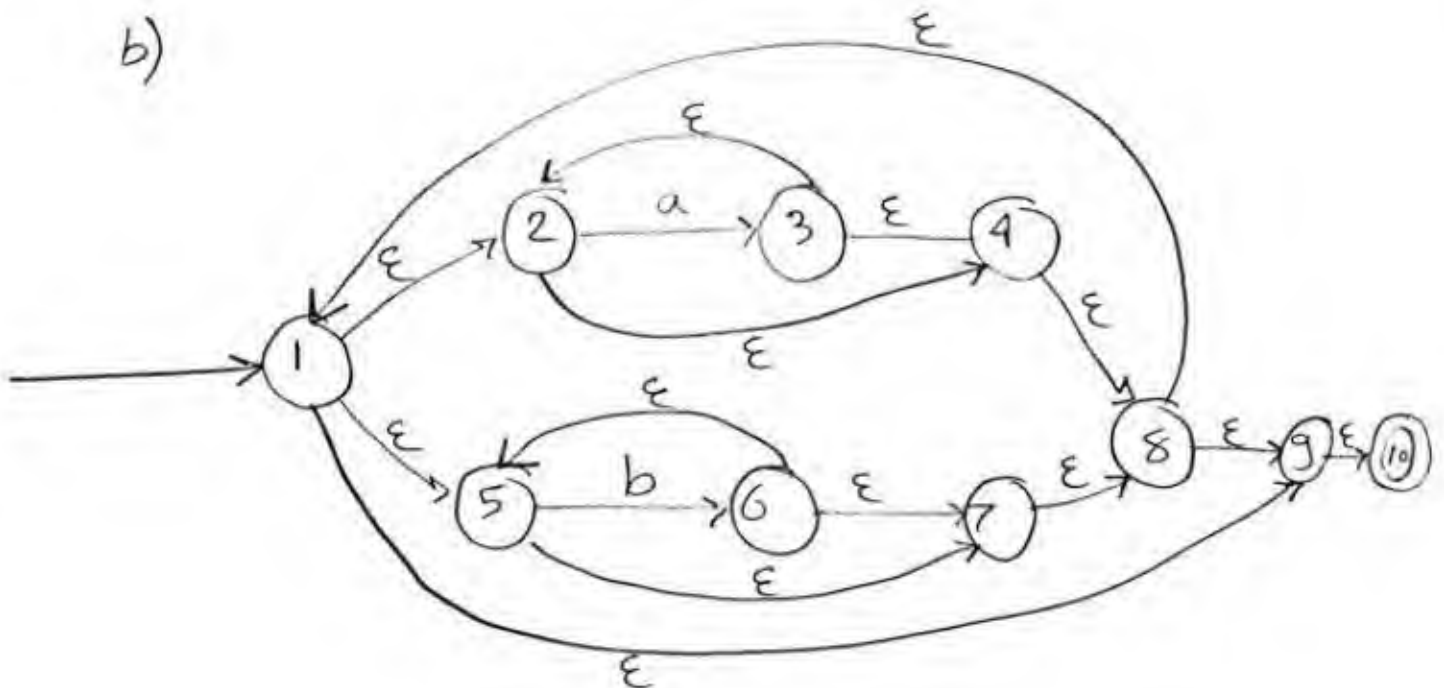
b) $(a^*/b^*)^*$

c) $((\epsilon/a)b^*)^*$

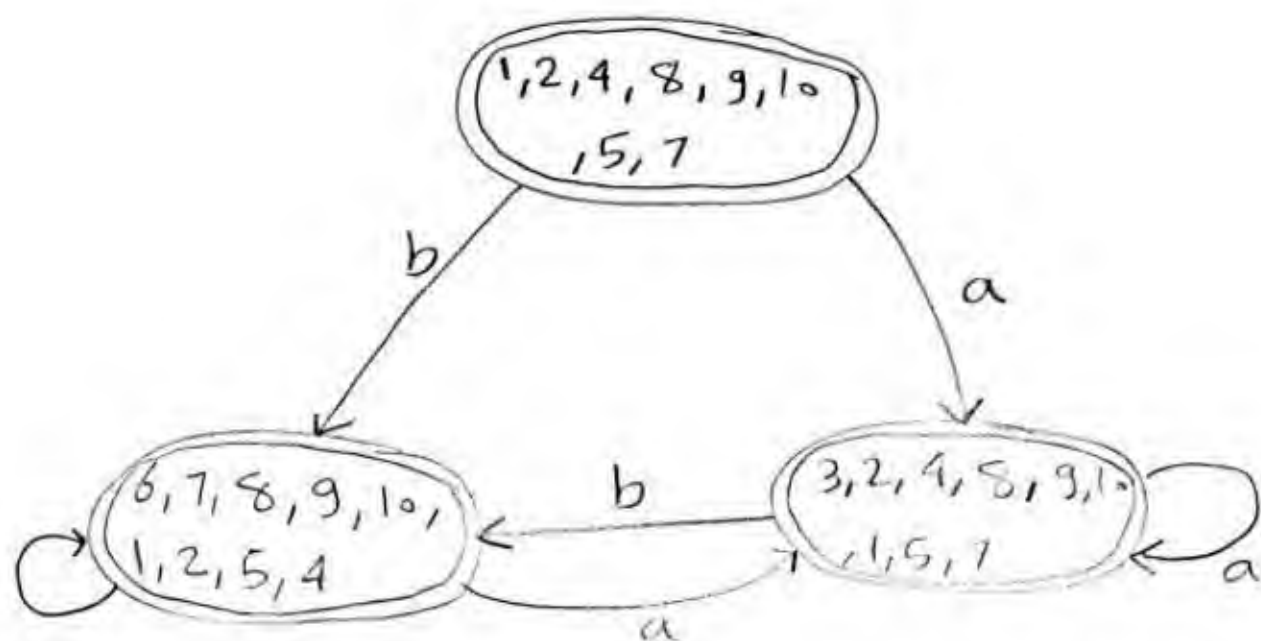
a) المسكنة اللفافات



b)

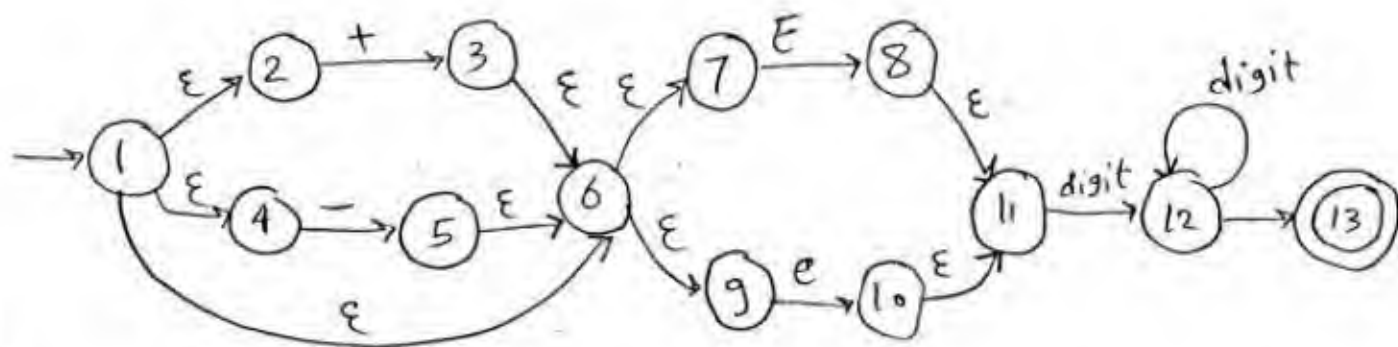


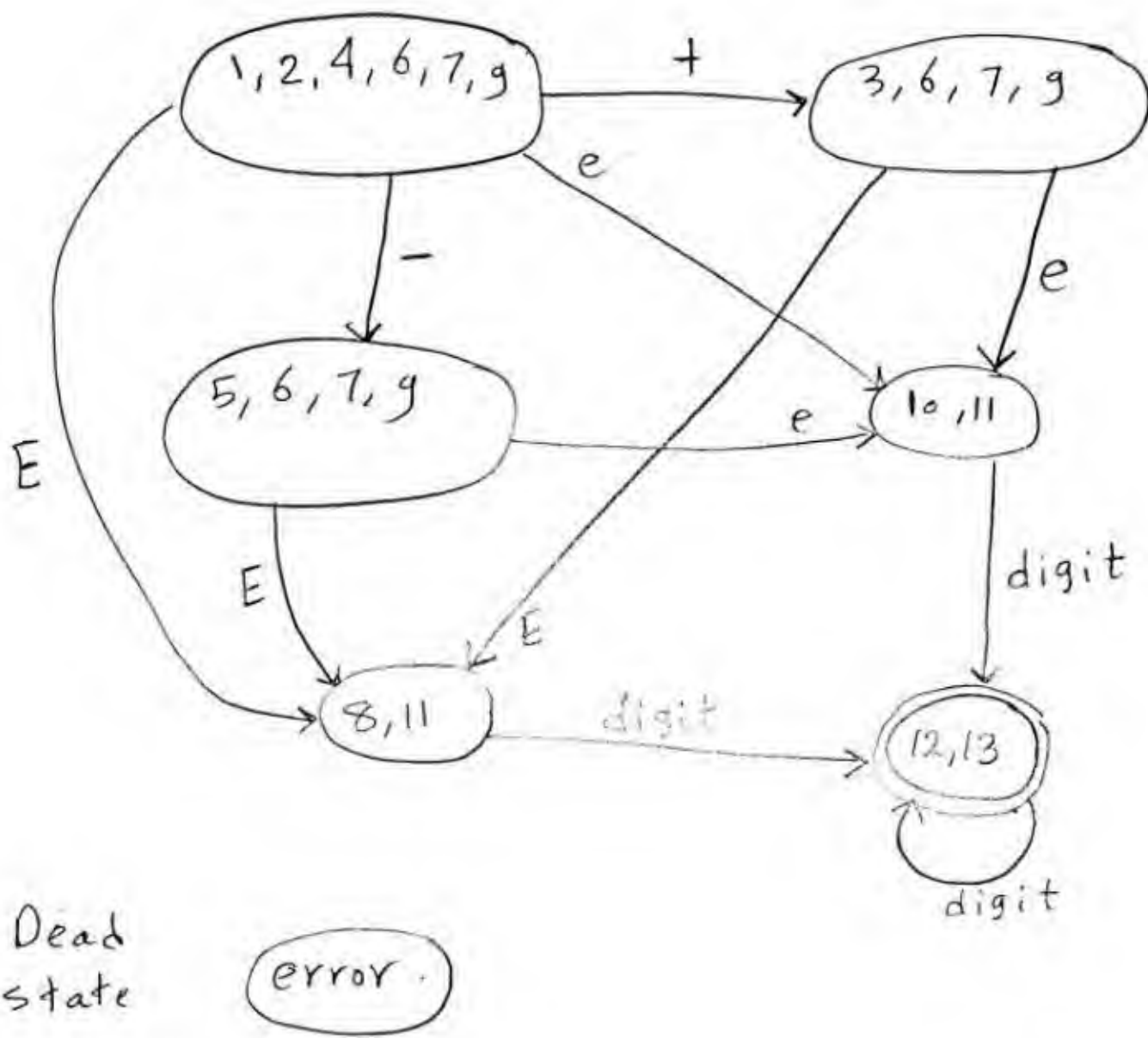
2 Sec 4



← اینتا تبدیل مع ال ۳ نقطه کرده وحتیجیب الشکل ده
 پس هتستبدل الأرقام دی بر رمز هیتللعوا التلاشه فی
 الأشر نری یعنف.

[6] $EXponent = (+/-/\epsilon) \cdot (E/e) \cdot (digit)^+$

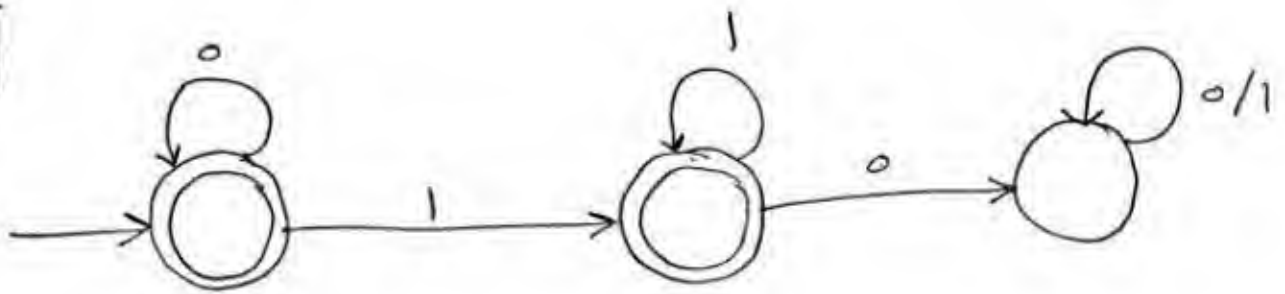




(Accept state) لا تقبل لا (Dead state)
 لا تقبل (missing transition) si

4 sec 4

7



a) string starts with zero or more
no. of zero followed by ~~zero~~ one
or more.

→ It accepts ϵ .

b) $0^* 1^*$

sheet 4

$E \rightarrow E + E \mid E * E \mid \text{digit}$

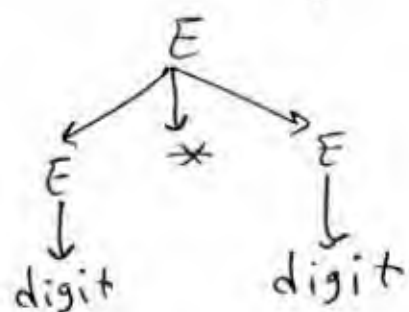
$E \rightarrow E + E$

$E \rightarrow E * E$

$E \rightarrow \text{digit}$
 \downarrow
 NT

لو عايز digit * digit

\Downarrow

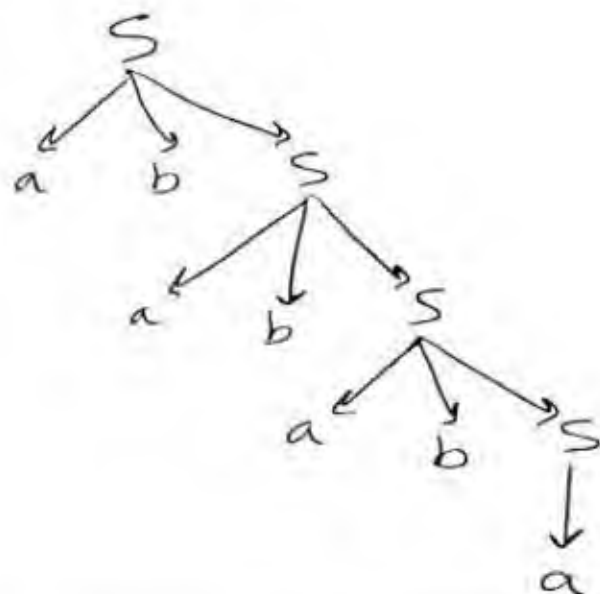


[E]

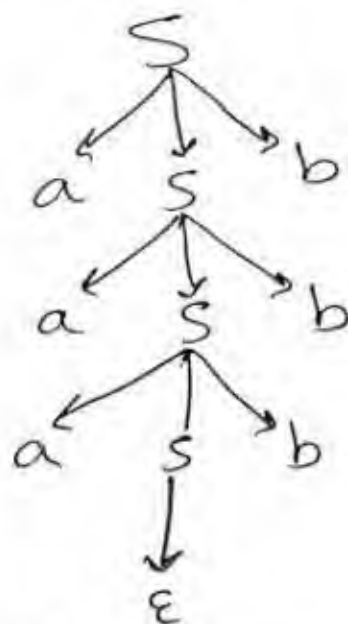
~~for Q_1 (Yale) Q_2 (Production) Q_3 (Production) Q_4 (Production)~~

From lecture slide $\rightarrow 463(261)$

5

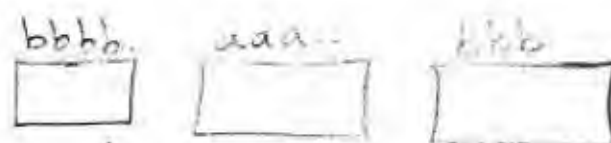
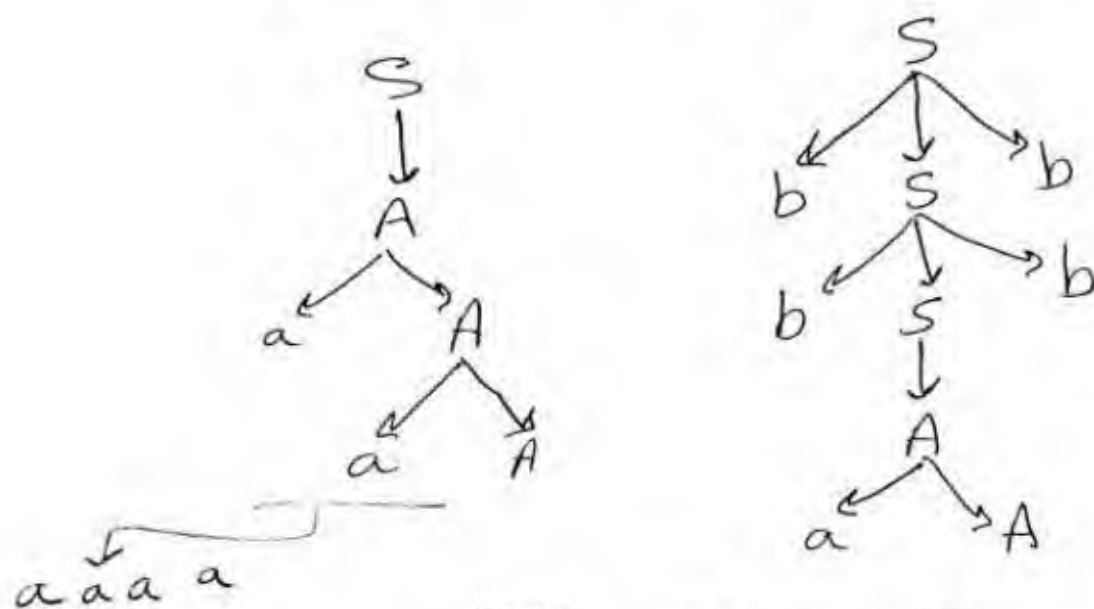
$$a. S \rightarrow abS \mid a$$

$$\Rightarrow (ab)^*a$$

b. $S \rightarrow aSb \mid \epsilon$

$$\text{no. of a's} = \text{no. of b's}$$
$$a^* b^*$$

$$\boxed{6} \text{ sec}$$

$$e) S \rightarrow bsb \mid A$$

$$A \rightarrow aA \mid \epsilon$$



no. of b's are equal

$$\Rightarrow b^* a^* b^*$$

equal

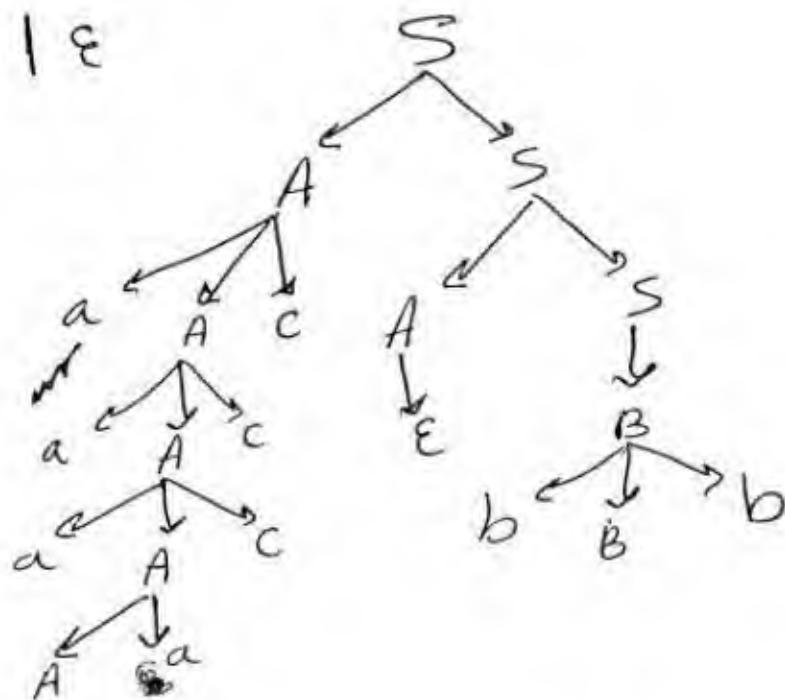
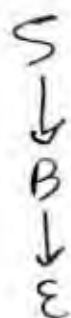
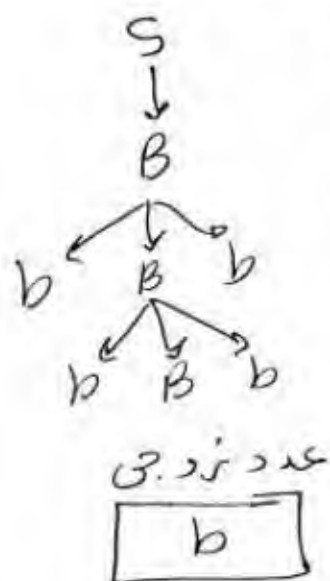
~~$$S \rightarrow As \mid B$$~~
~~$$A \rightarrow aaA$$~~

7) Sec 4

$$d) S \rightarrow As | B$$

$$A \rightarrow aAc | Aa | \epsilon$$

$$B \rightarrow bBb | \epsilon$$



→ strings of a and c with same
 All fewer c's than A's and no prefix
 has ~~more~~ more c's than a's. Followed by
 number of b's.

8 sec 4

e) $S \rightarrow S$ and $S | S$ or $S | (S)$
 $| true | False$

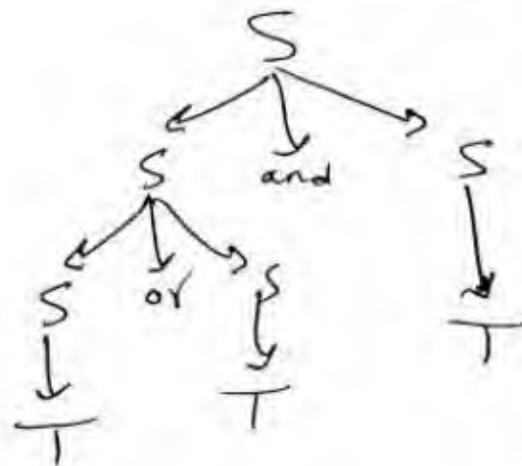
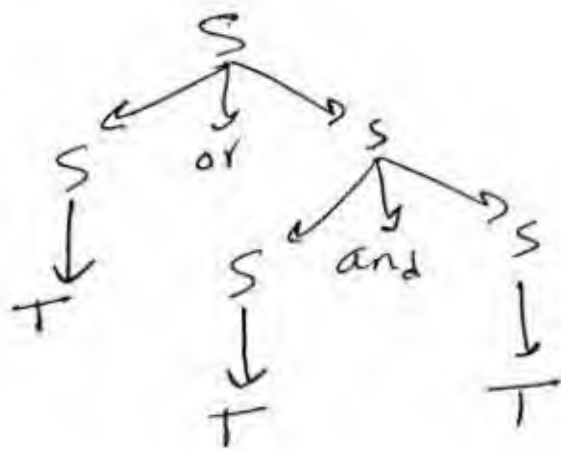
→ Boolean EXP. → true or false

could contain and, or, ~~()~~.

[6] (5) في الذاكرة (left recursive) لا

no. (e)

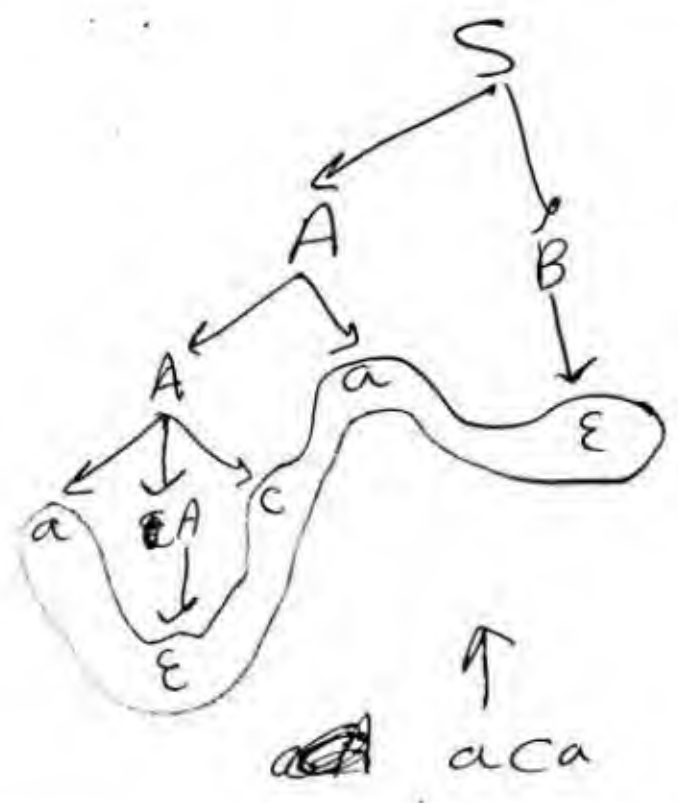
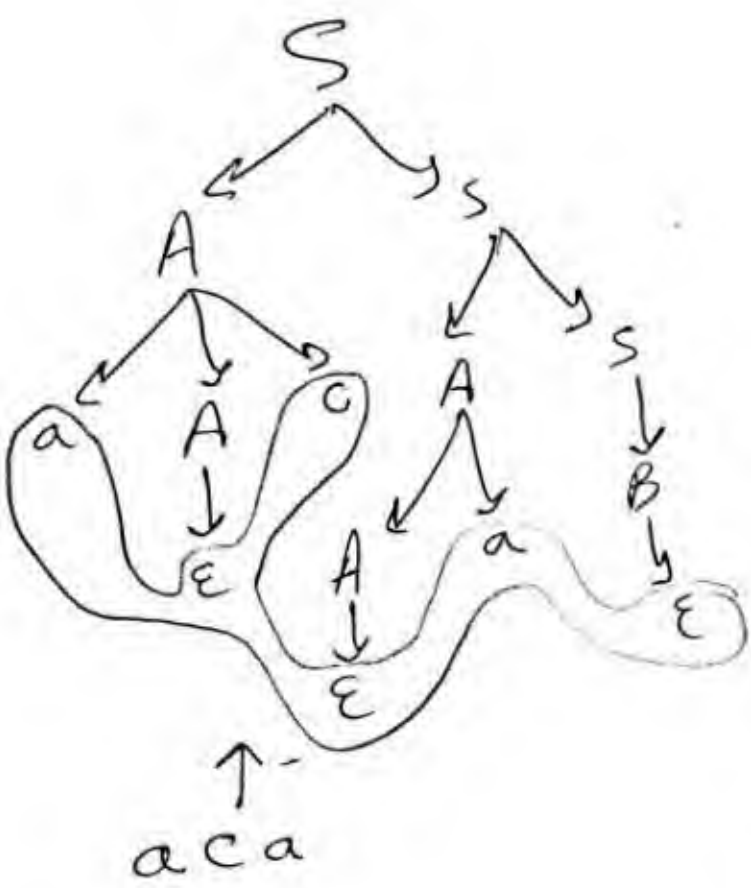
[7] which ambiguous?



والسبب (e)

[9] Sec 4

Ambiguous \leftarrow (d)



[10] sec 4